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Phillip C. Meredith, Palo Alto, CA;

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APR 2 4 2002

Technology Center 2100

Assignment For Published Patent Application
SIEMENS INFORMATION AND COMMUNICATION NETWORKS, INC;

Domestic Priority data as claimed by applicant

Foreign Applications

If Required, Foreign Filing License Granted 07/19/2001

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Technology Center 2600

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Title

Methods and apparatus for accessing and processing multimedia messages stored in a unified

multimedia mailbox

Preliminary Class
704

Data entry by : ASRAT, FANAYE   **Team :** OIPE   **Date:** 07/20/2001

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PATENT APPLICATION
Attorney Docket No. : <u>2001P08524US</u>

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Date of Deposit: <u>22 MAY 2001</u>

[OIPE stamp: APR 2 2 2002 PATENT & TRADEMARK OFFICE]

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

THE ASSISTANT COMMISSIONER FOR PATENTS
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TRANSMITTAL LETTER FOR NEW APPLICATION

Sir:

Transmitted herewith for filing is a(n) [X]Original patent application.
  [X] Utility [ ] Design [ ]Continuation-in-part application

INVENTOR(S): Christoph A. Aktas, John W.Yates and Phillip C. Meredith

TITLE: METHOD AND APPARATUS FOR ACCESSING AND PROCESSING MULTIMEDIA
MESSAGES STORED IN A UNIFIED MULTIMEDIA MAILBOX

Enclosed with this transmittal (submitted in duplicate) are the following:

[X] <u>Twenty-four (24)</u> page specification.
[X] <u>One (1)</u> sheets of drawings [ ] formal drawings [x] informal drawings (one set)
[X] The Declaration and Power of Attorney [x] signed [ ] unsigned
[X] An Assignment Transmittal and Assignment to <u>SIEMENS INFORMATION AND COMMUNICATION NETWORKS, INC.</u>
[ ] Information Disclosure Statement with PTO1449 and ( ) references.
[X] Filing fee has been calculated as shown below (other than small entity):

For	Number Filed	Number Extra	Rate		Additional Fees
Total Claims	16 - 20	= 0	x $ 18		$ 0.00
Indep. Claims	6 - 3	= 3	x $ 80		$ 240.00
[ ] First Presentation of a Multiple Dependent Claim				x $270	$ 0.00
		Basic filing Fee			$710.00
				Total	$950.00

Please charge my Deposit Account No. <u>19-2179</u> in the amount of <u>$950.00</u>. The Commissioner is hereby authorized to charge any fees that may be required, or credit any overpayment to Deposit Account No. <u>19-2179</u> pursuant to 37 CFR 1.25. A duplicate copy of this sheet is enclosed.

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Respectfully submitted,

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OIPE JC117
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Atty Docket No.: 2001P08524US

IN THE
UNITED STATES PATENT AND TRADEMARK OFFICE

This is a U.S. Patent Application for:

Title: METHODS AND APPARATUS FOR ACCESSING AND
               PROCESSING MULTIMEDIA MESSAGES STORED IN A
               UNIFIED MULTIMEDIA MAILBOX

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IN THE UNITED STATES

PATENT AND TRADEMARK OFFICE

PATENT APPLICATION

5   METHODS AND APPARATUS FOR ACCESSING AND
PROCESSING MULTIMEDIA MESSAGES STORED IN
A UNIFIED MULTIMEDIA MAILBOX

BACKGROUND OF THE INVENTION

10

1. Field of the Invention

         The invention relates to methods and apparatus

for processing multimedia messages. More particularly,

the invention relates to methods and apparatus for

15   (1) converting messages from one medium to another;

(2) performing message content analysis; (3) utlizizing

linguistically based analysis tools to identify message

relationships regardless of media type; (4) interrelating

messages according to content; and (5) providing a simple

20   message reference capability to simplify message access.

2. Brief Description of the Prior Art

         Business people receive many different kinds of

messages, e.g. electronic mail, voice mail, fax, video

25   messages, attachments to electronic mail. It is possible

and desirable to have all messages sent to a single mail

box from which they may all be retrieved regardless of

the message type. However, the only retrieval device

which is capable of reading all of these different types

30   of messages is a personal computer having a graphical

display and audio video capability. Unfortunately, it is

not always possible or convenient to retrieve messages
with a personal computer.

A unified mailbox where all kinds of media
5 (voice, fax, e-mail, and video) are made accessible
and/or visible from virtually anywhere to a subscriber or
user in one basket is a convenient means of communication
when compared to handling multiple mailboxes with
distinct media. Current solutions for a unified mailbox
10 are inefficient, however, for someone with an intense
communication style and a frequent need to handle his/her
messages remotely. The mismatch of media type of the
information and the capabilities of the various (often
limited) devices used for remote access places a heavy
15 burden on the user and the interface of the system. This
is especially true for the interfaces utilizing a
telephone with no display, or handheld devices with
limited display capabilities.

20 Some of the problems arise in the context of
compound and/or lengthy messages in connection with one
or the other access means. For example, it is not
possible to deliver voice and fax messages to a text-only
e-mail capable device. It is also difficult to deal with
25 lengthy e-mails delivered to a voice-only interface or to
a text-interface with limited capabilities. Even when
the device has a fully functional GUI interface, there is
room for increased efficiency with large amounts of data.

2

It is a challenge to efficiently present the information in various office document formats (e.g., Word Processor, Spreadsheet, and Presentations) associated with a message. It is often difficult to locate and visually
5   present related messages and attachments. When the mailbox has many messages in it, it is difficult to reference the messages.

Other problems arise due to the increased
10   amount of information the unified mailbox can provide. Current mechanisms for organizing and presenting relationships among messages (listing by arrival time, subject, sender, etc.) are insufficient for a large number of messages of varying media and, especially,
15   mixed media within a given message.

It would be desirable to provide a flexible, media independent way of finding and navigating related messages. With current systems, for example, the user is
20   unable to recognize that there is a relationship between a voice message and a fax without listening to the voice message and displaying/printing the fax.

Because the presentation of unified mailbox
25   information is more complex, especially if relationships as described hereinabove are incorporated into the presentation, identifying an individual item (message or message attachment) for further action can become

problematic. How does the client/user identify to the server which message is to be acted upon? Are the entire message and its attachments to be involved? Is it a single attachment or only the original message body? And

5 if the messages are presented in a "graph" format, how does the user select an individual item?

Current unified mailbox systems offer media sensitivity for message retrieval only when accessed with

10 a graphical user interface (GUI) from a PC client. If a particular media or office document is attached to an e-mail, the user needs to click-on it in order to launch a specific application, for example, an audio player for voice, tiff-viewer for fax, video player to view a video

15 message, etc.

For users with intense communication requirements (e.g. executives or customer service agents who receive hundreds of compound messages daily) there

20 are no means to quickly process inbox messages except by the sender information, the subject line, and maybe few lines of the message body. In order to read messages, the user has to click on or mark a certain item in a graphical interface in order to get to the message body.

25

No content summarization of lengthy text messages or respective attachments is available yet that would remarkably improve the efficiency of handling the daily information avalanche in the office.

Current mailbox searching does not provide visual display of content and temporal relationships. No search capability exists yet for non-text messages.

5

If a unified mailbox is accessed from a telephone interface, voice and e-mail messages are retrievable and the user can listen to both. Existing text-to-speech technology provides a means to convert the

10 e-mail to voice. A fax message can be forwarded to a fax machine or printer.

However, if an e-mail contains an attachment, the systems are able to indicate that, but are unable to

15 access its content. Similarly, the contents of a fax or other documents attached to an e-mail are indicated but not accessible to the user accessing the mailbox with a telephone interface.

20 If an e-mail is lengthy, the user may be able to navigate through it by accelerating the text-to-speech reading speed. However, there is no means of text content summarization applied to shorten the process without eventually losing/skipping critical content.

If messages are forwarded to a handheld device via a wireless service but the device has limited text-display capabilities only certain parts of the email

5   (From, Subject and a limited number of characters of the message body) can be displayed. If the critical information in the message is not in the beginning of the message body that is displayed, it is "lost" to the recipient. He/she has to use other access methods or

10   make a call into the messaging system/server to retrieve the full text message (by listening to it or by initiating a printing to a device nearby).

As mentioned above, voice and other media

15   attachments are indicated but not transmitted and/or displayed on a text-only display. The user needs to use other access methods to retrieve the messages. Additionally, no text content summarization methods are utilized to deal with access device technology

20   limitations.

Full message sensitivity is only provided when accessing a mailbox with a multimedia PC. However even multimedia PCs lack any means to summarize message

25   content in order to make it more efficient for the recipient to read his/her lengthy messages. Also, there are yet no means to summarize content of attached documents.

When accessing a mailbox with a telephone, the media and device sensitivity is limited to voice and e-mail. Again, no techniques of text content summarization are applied yet in order to make the retrieval of the message information over the phone more convenient.

In the case of handheld or mobile devices with limited text-display capabilities, the problem is that lengthy messages are usually not transmitted in their entirety by the wireless/paging service providers. Additionally, any other media attachments are "lost". No content summarization of lengthy text messages or respective attachments is available yet that would remarkably improve the efficiency of handling the daily information avalanche in the office.

SUMMARY OF THE INVENTION

5   It is therefore an object of the invention to
provide methods and apparatus for accessing multimedia
messages from a unified mailbox.

            It is also an object of the invention to
10   provide methods and apparatus for converting media types
in a unified multimedia mailbox.

            It is another object of the invention to
provide methods and apparatus for summarizing the content
15   of messages in a unified multimedia mailbox.

            It is yet another object of the invention to
provide methods and apparatus for cross referencing
related messages based on content.

20

            It is another object of the invention to
provide methods and apparatus for improved handling of
email attachments.

25   It is still another object of the invention to
provide methods and apparatus for customizing mail
handling based on a system profile adapted to the device
used to access the mailbox.

8

In accord with these objects which will be
discussed in detail below the apparatus and associated
methods of the invention include a mail server that
provides multimedia message inbox for one or several
5   users on a network; a subsystem that detects media
attachments to messages in a mailbox; a subsystem that
converts media attachments into another media type using
text-to-speech, fax-to-text, video voice track into text
and speech-to-text; a subsystem that analyzes and
10   summarizes the text content of original or converted
media in respect of the linguistic meaning; a subsystem
that delivers appropriate media according to an access
device and message purpose, as defined in a profile; a
subsystem that identifies cross-media interrelationships
15   between messages and controls the media conversions
necessary for this analysis; and a subsystem that
controls a reference number scheme.

The methods and apparatus of the invention
20   solve the problems discussed above by utilizing advanced
media conversion methods, analysis and summarization of
message content, and intelligent forwarding concepts. It
provides access device and media sensitive intelligence
for a mailbox when retrieving or forwarding a particular
25   message.

The concept of media conversion is extended beyond text-to-speech to other attachments; a speaker-independent, large vocabulary, telephony-quality

5   speech recognition engine is utilized to convert a voice message to text or to convert the voice track of a video attachment into readable text. Similarly, fax information is converted into text.

10   According to the invention, the content of messages is automatically summarized. The summarization of a message content is an improvement toward efficiency, particularly in the case of a forwarded lengthy message to a handheld device with limited display capabilities.

15   The same is true for reading a lengthy message over the phone. Summarization is also applied to attached media (e.g. fax, Word document) extends even the media content accessible.

20   Both, the media conversion and the content summarization applied together provide compatibility with the access device. Depending on the user, the types of potential access devices are usually predefined; therefore messages along with their attachments that form

25   the message content can be tailored to those devices while accessed or forwarded according to a profile. This ensures the availability of more information to the recipient at the device of choice and that is probably

most convenient. Still, if the user requires more information, he/she can utilize another access method.

The invention also provides cross-media searching and visual displaying. Often messages related to a specific topic of interest to the user are in different media and spread throughout the message store (e.g. in different folders). The cross-media search finds these messages and presents them to the user in a way that makes the content and time relationships clear allowing efficient use of the otherwise overwhelming amount of information. The search engine utilizes sophisticated linguistically based analysis tools to discover the message relationships.

Additionally, a reference number scheme for all messages is provided. All messages in a particular group of messages of interest to the user are assigned a reference number to be used in further actions. Thus a PDA user can, for example, get a summary of messages with reference numbers and an indication of the message type. This reference number may then be used to access that message, and through it, a particular attachment to that message for further. Voice commands may be used to invoke actions on items more efficiently using the reference numbers of messages.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a high level block diagram of a multimedia mail system according to the invention.

DETAILED DESCRIPTION

Turning now to Figure 1, an integrated multimedia messaging system according to the invention includes a mail server 10 that provides multimedia message inbox for one or several users on a network; a mail processor 11; a subsystem 12 that detects media attachments to messages in a mailbox; one or more subsystems that converts media attachments into another media type using text-to-speech 14, fax-to-text 16, video voice track into text 18 and speech-to-text 20 a subsystem 22 that analyzes and summarizes the text content of original or converted media in respect of the linguistic meaning; a subsystem 24 that delivers appropriate media according to an access device and message purpose, as defined in a profile; a subsystem 26 that identifies cross-media interrelationships between messages and controls the media conversions necessary for this analysis; and a subsystem 28 that controls a reference number scheme.

The invention can better be understood through an illustrative example such as the notification of a single-media voice message to a data pager. The

5 following describes an example of this process involving a user that has a multimedia mailbox and a data pager who receives a voice message.

The problem is to provide the "best" information to the pager so the user can proceed most

10 efficiently. What is the "best" information will vary according to the user's actual preferences, but will most likely include sender identification and meaningful portions of the message itself. In addition, there are probably messages the user would prefer to delay any

15 handling of until an appropriate device is available. Thus the steps for sending voice messages to a pager would include: a) filtering messages to be processed, b) speech-to-text conversion, c) summarization and post

20 filtering, and d) selection and delivery of text information to the device.

Since the resources involved in processing a message may be large, messages are pre-filtered.

25 Speech-to-Text is "expensive" in its use of resources. Interrupting the user with any but the most important messages can be an unnecessary expense of the user's time and attention as well as a waste of system resources.

Thus a mechanism to prevent the presentation of a message to a given device is important. This filtering is based on a variety of data including sender, message priority, etc. and the criteria for filtering is stored in the

5   system profile for the user.

Voice messages which pass through the pre-filter are converted to text. This is most efficiently accomplished on the server side, perhaps with a dedicated

10   "helper" server explicitly for the server so as not to disturb other processing on the server. The resulting text message is then be associated with the original message (as the text message body or as a separate attachment).

15

Before sending the text message to the pager, it is subjected to post-conversion filtering and summarization. Post-conversion filtering is optional, preventing processing of messages that appear not to be

20   on a topic deemed important to the user. If it does not appear important, it would then remain in the mailbox to be processed. If the message survives the post-conversion filtering step, the text is then summarized.

25   Most simply, summarization includes reduction to a list of keywords and phrases found within the text. The summarization is created by removing from the message words/phrases not found within the user-defined list of

keywords/phrases. More complex summarization includes allowing the user to specify the keyword/phrase list based on the sender of the message.

5   Since the message is a speech-to-text conversion, the keywords and their homonyms should be checked. An option on the summarization, for example a check box that says ``allow homonyms'', could be utilized to enable this feature.

10

Even more complex summarization methods contemplated by the invention involve performing sophisticated grammatical parsing and analysis.

15   Data is transmitted to the pager based on a user defined data selection criteria which is stored as a template in the system profile for the user. The data available for selection includes sender same, time, summary, message priority, un-summarized text, and other

20 fields as available.

The user describes a template that indicates the information desired and the number of characters of each field desired. For example:

25

          ``From %SENDER% at %TIME%:   %100SUMMARY%''

indicates that the user wants a string that includes the

entire sender name, the received time and the first 100 characters of the summary to appear on his pager.

When the user receives the page, the summary
5   information gives him/her enough information to determine how critical the message is. If it appears critical, he/she may choose to access the entire message using a different device, e.g. a telephone.

10   Another example is the retrieval of text messages (such as email) via a telephone. Text messages are pre-filtered as described above. The text is then summarized. The summary is then converted to speech which is played on the telephone to the user calling in
15   for messages.

Still another example is sending a fax message to a PDA. Fax messages are pre-filtered based on sender and priority. The fax messages which pass through the
20   filter are converted to text with OCR (optical character recognition) software. The text is summarized. Data is selected using a user defined template. The text message is sent tot he PDA and the user is ``notified''.

25   In general, a user can define a ``morphing process'' for messages in the context of any particular target device such as a pager or a cell phone with a limited display.

The morphing process is a combination of
message filtering, message restructuring, data
conversion, data summarization, data selection and
5   notification steps that are configured to handle
particular media types for particular target devices.
Each user may define a set of rules and parameters for
each device type defining how messages are morphed.

10   For example, a user may have a Voice
Message-to-Pager morph definition that would do the
following:

(a) filter messages based on sender and priority,
15   removing from further processing (i.e. leaving
on the server) messages that are not deemed
urgent enough to disturb the user while out of
the office;

20   (b) perform speech-to-text conversion;

(c) summarize the text based on criteria defined by
the user;

25   (d) perform further filtering based on the
summarized/converted text;

(e) organize the text in a template; and

17

(f) send the message to the pager.

In general, a morphing process will include
these steps in some order determined by the user. In
5   addition, message restructuring steps allow the user to
handle multiple attachments of varying media attached to
the message. For example, the user may select that a
summary of the attachments be created (attachment name
and media type) or may request that the attachments be
10   expanded, converted and summarized as described above for
the single media message.

There have been described and illustrated
herein methods and apparatus for processing multimedia
15   messages. While particular embodiments of the invention
have been described, it is not intended that the
invention be limited thereto, as it is intended that the
invention be as broad in scope as the art will allow and
that the specification be read likewise. It will
20   therefore be appreciated by those skilled in the art that
yet other modifications could be made to the provided
invention without deviating from its spirit and scope as
so claimed.

What is claimed is:

1. A multimedia mailbox system, comprising:

5   a) a message store for storing multimedia messages; and

       b) a plurality of data converters for converting
          messages in one medium to messages in another
          medium.

10

       2. A system according to claim 1 wherein said plurality
       of data converters includes at least two selected from
       the group consisting of a text to speech converter, a
15   speech to text converter, and a fax to text converter.

       3. A system according to claim 1 further comprising
       means for linguistically based searching of multiple
20   message types and for linguistically relating multiple
       messages of different type.

       4. A system according to claim 1 further comprising
25   means for assigning a reference number to each message.

5. A multimedia mailbox system, comprising:

a) a message store for storing multimedia messages; and

b) means for linguistically based searching of multiple
message types and for linguistically relating
multiple messages of different type.

6. A system according to claim 5 further comprising
means for assigning a reference number to each message.

7. A multimedia mailbox system, comprising:

a) a message store for storing multimedia messages;

b) a plurality of data converters for converting
messages in one medium to messages in another
medium;

c) means for linguistically based searching of multiple
message types and for linguistically relating
multiple messages of different type and

d) means for assigning a reference number to each
message.

8. A system according to claim 7 wherein said plurality of data converters includes at least two selected from the group consisting of a text to speech converter, a speech to text converter, and a fax to text converter.

9. A method for managing a multimedia mailbox, comprising the steps of:

   a) storing messages of different types in a single mailbox; and

   b) automatically converting messages from one medium to another.

10. A method according to claim 9 wherein said step of converting includes at least two selected from the group consisting of converting text to speech, converting speech to text, and converting fax to text.

11. A method according to claim 9 further comprising the step of linguistically searching multiple message types and linguistically relating multiple messages of different type.

12. A method according to claim 9 further comprising the step of assigning a reference number to each message.

5   13. A method for managing a multimedia mailbox, comprising the steps of:

   a) storing messages of different types in a single mailbox; and

10

   b) linguistically searching multiple message types and linguistically relating multiple messages of different type.

15

   14. A method according to claim 13 further comprising the step of assigning a reference number to each message.

15. A method for managing a multimedia mailbox, comprising the steps of:

5   a) storing messages of different types in a single
        mailbox;

     b) automatically converting messages from one medium to
        another;

10

     c) linguistically searching multiple message types and
        linguistically relating multiple messages of
        different type; and

15   d) assigning a reference number to each message.

16. A method according to claim 15 wherein said step of
converting includes at least two selected from the group
20 consisting of converting text to speech, converting
speech to text, and converting fax to text.

ABSTRACT OF THE DISCLOSURE

The invention provides the user of a unified messaging mailbox with efficient, intelligent, media and

5   device sensitive methods and apparatus to access and process (e.g., read, listen, forward, and search) messages. The invention introduces media conversion capabilities to selectively treat multimedia messages and message attachments so that they can be efficiently

10   handled by mobile devices like PDAs (Personal Digital Assistants), pagers, or phone devices (with or without a text display feature). Furthermore, the invention introduces message content analysis capabilities that will recognize linguistic relationships between messages

15   regardless of the media type. The invention also describes the ability to present these linguistic relationships along with the standard messaging relationships (Message arrival time, subject, sender, etc.). Still further, the invention introduces a message

20   referencing option that allows simpler message selection from certain devices.

Mail Server 10

Mail Processor 11

Attachment Detector 12

Analysis and Summary 22

System Profile 24

Cross-media Interrelation 26

Reference Numbers 28

Text to Speech 14

Speech to Text 20

Fax to Text 16

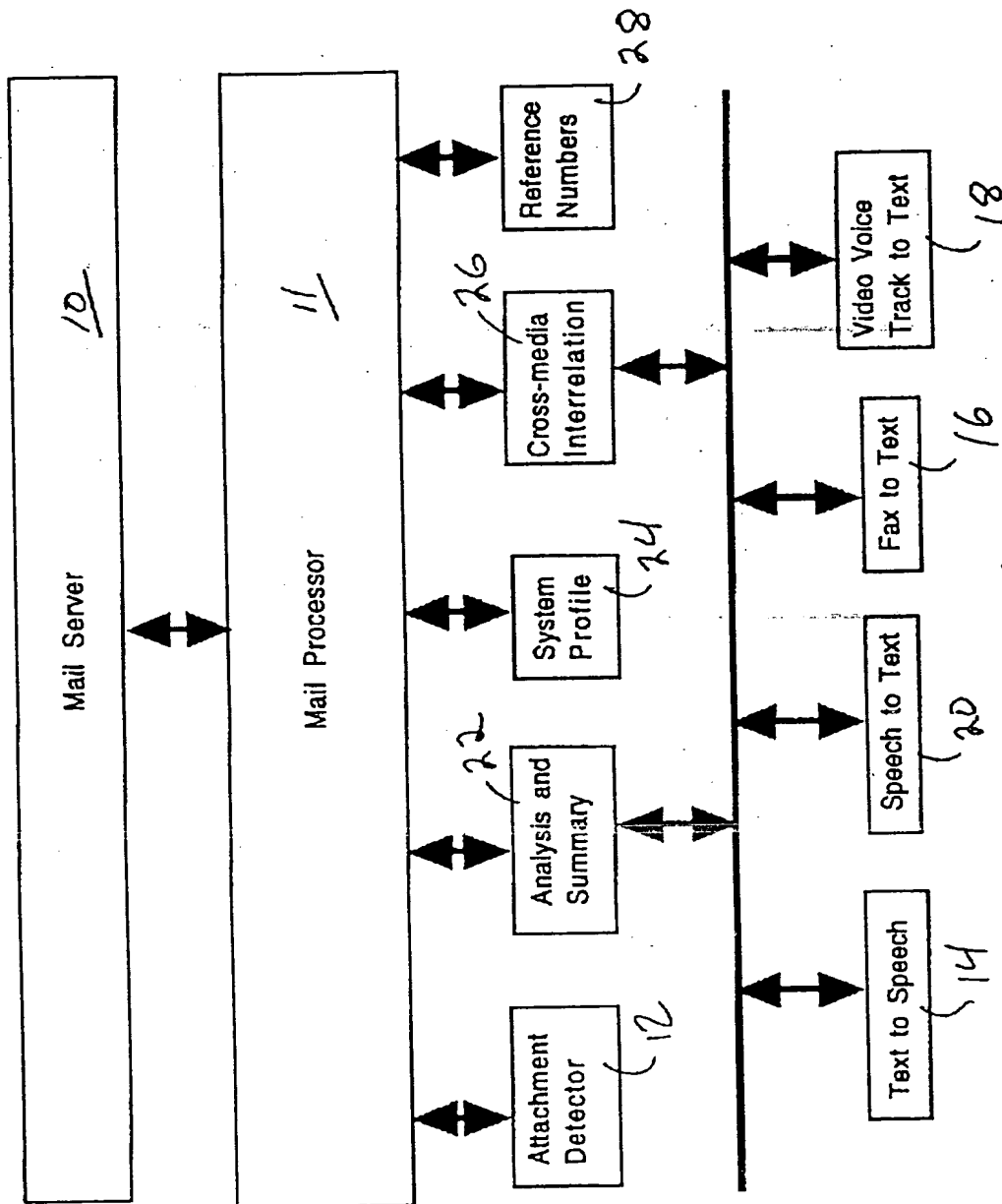Video Voice Track to Text 18

Figure 1

DECLARATION FOR PATENT APPLICATION & POWER OF ATTORNEY

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name,

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

METHODS AND APPARATUS FOR ACCESSING AND PROCESSING MULTIMEDIA MESSAGES STORED IN A UNIFIED MULTIMEDIA MAILBOX

the specification of which (check one)

X_ is attached hereto.

_ was filed on _____ as Application Serial No. _____

and was amended on _____ (if applicable)

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose all information known to me to be material to patentability as defined in Title 37, Code of Federal Regulations § 1.56.

I hereby claim foreign priority benefits under Title 35, United States Codes, § 119 of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on which priority is claimed:

PRIOR FOREIGN APPLICATION(S)　　　　　　　　　Priority claimed

(Number)	(Country)	(Day/month/year filed)	Yes	No
(Number)	(Country)	(Day/month/year filed)	Yes	No
(Number)	(Country)	(Day/month/year filed)	Yes	No

I hereby claim the benefits under Title 35, United States Code, § 120 of any United States application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code, § 112, I acknowledge the duty to disclose material information as defined in Title 37, Code of Federal Regulations, § 1.56(a) which occurred between the filing date of the prior application and the national or PCT international

filing date of this application:

(Application Serial No.)	(Filing date)	(Status) (patented,pending,abandoned)

(Application Serial No.)	(Filing date)	(Status) (patented,pending,abandoned)

I hereby claim the benefit under 35 U.S.C. 119(e) of any United States provisional application listed below:

(Application Serial No.)	(Filing date)	(Status)

Power of Attorney: As a named inventor, I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and transact all business in the Patent and Trademark Office connected therewith. (list name and registration number)

Adel A. Ahmed, Reg. No. 29,606; I. Marc Asperas, Reg. No. 37,274; Stanton C. Braden, Reg. No. 32,556 Alexander J. Burke, Reg. No. 40,425; Joseph S. Codispoti, Reg. No. 31,819; Henry J. Groth, Reg. No. 39,696; Tracy L. Hurt, Reg. No. 34,188; Mark H. Jay, Reg. No. 27,507; Brian K. Johnson, Reg. No. 46,808; Stuart P. Kaler, Reg. No. 35,913; Rosa S. Kim, Reg. No. 39,728; Peter A. Luccarelli Jr., Reg. No. 29,750; James M. Markarian, Reg. No. 31,277; Jeffrey P. Morris, Reg. No. 25,307; Pasquale Musacchio, Reg. No. 36,876; John Musone, Reg. No. 44,961; Frank J. Nuzzi, Reg. No. 42,944; Donald B. Paschburg, Reg. No. 33,753; Laura M. Slenzak, Reg. No. 35,363; Daniel J. Staudt, Reg. No. 34,733; Erik C. Swanson, Reg. No. 40,194; Heather S. Vance, Reg. No. 39,033; Michael J. Wallace, Reg. No. 44,486

Send correspondence to:

Siemens Corporation
Intellectual Property Department
186 Wood Avenue South
Iselin, N.J. 08830

Direct telephone calls to:

Elsa Keller
Legal Administrator (732) 321-3026

I hereby declare that all statements made herein on my own knowledge are true and that all statements made on information and belief are believed to be true, and further that these statements were made with the knowledge that willful false statements and the like so made

are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the State Code and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Full name of first
joint inventor: Christoph A. Aktas

Inventor's signature: _____

Date: 4/30/01

Residence: Sunnyvale, CA   *Kühbacher Weg 1 , D-86159 Augsburg*
                                                        Germany

Citizenship: Germany
                            Kühbacher Weg 1 , D-86159 Augsburg
Post Office Address: 992 Planetree Place, Sunnyvale, CA 94086

Full name of first
joint inventor: John W. Yates

Inventor's signature: _____

Date: _____

Residence: Mountain View, CA

Citizenship: USA

Post Office Address: 106A Kittoe Drive, Mountain View, CA 94043

are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the State Code and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

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                         _____

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                         _____

Citizenship: Germany
                         _____

Post Office Address: 992 Planetree Place, Sunnyvale, CA 94086
                         _____

Full name of first
joint inventor: John W. Yates
                         _____

Inventor's signature: _____

Date: _____

Residence: Mountain View, CA
                         _____

Citizenship: USA
                         _____

Post Office Address: 106A Kittoe Drive, Mountain View, CA 94043
                         _____

Full name of first joint inventor:	Phillip C. Meredith
Inventor's signature:	
Date:	3/3/01
Residence:	Palo Alto, CA
Citizenship:	USA
Post Office Address:	459 Homer Avenue #6, Palo Alto, CA 94301

RECORDATION FORM COVER SHEET
PATENTS ONLY

U.S. DEPARTMENT OF COMMERCE
Patent and Trademark Office

Attorney Docket: **2001 P 08524 US**

To the Honorable Commissioner of Patents and Trademarks: Please record the attached original documents or copy thereof.

1. Name of conveying party(ies): Christoph A. Aktas, John W. Yates and Phillip C. Meredith Additional name(s) of conveying party(ies) attached? __ Yes _X_ No	2. Name and address of receiving party(ies) Name: SIEMENS INFORMATION AND COMMUNICATION NETWORKS, INC. Internal Address: Intellectual Property Department Street Address: 900 Broken Sound Parkway
3. Nature of conveyance: _x_ Assignment __ Merger Execution Date(s): April 30, 2001, March 3, 2001 and March 3, 2001 respectively	City: Boca Raton State: FL ZIP: 33487 Additional name(s) & address(es) attached? __ Yes _X_ No

4. Application number(s) or patent number(s):
If this document is being filed together with a new application, the execution date of the application is: April 30, 2001, March 3, 2001 and March 3, 2001 respectively

A. Patent Application No.(s)   B. Patent No.(s)

Additional numbers attached? __ Yes _X_ No

5. Name and address of party to whom correspondence concerning document should be mailed: Name: Elsa Keller Internal Address: Siemens Corporation Intellectual Property Department Street Address: 186 Wood Avenue South City: Iselin State: NJ ZIP: 08830	6. Total number of applications and patents involved: 1
	7. Total Fee (37 CFR 3.41) . . . . $ 40.00 __ Enclosed _X_ Authorized to be charged to deposit account
	8. Deposit Account No. 19-2179

DO NOT USE THIS SPACE

9. Statement and signature
To the best of my knowledge and belief, the foregoing information is true and correct and any attached copy is a true copy of the original document.

Tracy L. Hurt reg. no. 34,188
Name of person signing   Signature   Date

Total number of pages including cover sheet, attachments, and document: 5

ASSIGNMENT

For good and valuable consideration, we, **Christoph A. Aktas residing at 992 Planetree, Sunnyvale, CA 94086, citizen of Germany, John W. Yates residing at 106A Kittoe Drive, Mountain View, CA 94043, citizen of USA, and Phillip C. Meredith residing at 459 Homer Avenue #6, Palo Alto, CA 94301, citizen of USA**

Hereby sell, assign and transfer to **SIEMENS INFORMATION AND COMMUNICATION NETWORKS, INC.**, a corporation of the State of Delaware, having a principal place of business at 900 Broken Sound Parkway, Boca Raton, FL 33487, hereinafter "Assignee", its successors, assigns and legal representatives, the entire right, title and interest in and for the United States and all foreign countries, in and to any and all improvements which are disclosed in the application for United States Letters Patent, which has been executed by the undersigned concurrently herewith, and is entitled:

METHODS AND APPARATUS FOR ACCESSING AND PROCESSING MULTIMEDIA MESSAGES STORED IN A UNIFIED MULTIMEDIA MAILBOX

and in and to said application and all divisional, continuing, substitute, renewal, reissue, and all other applications for Letters Patent which have been or shall be filed in the United States and all foreign countries on any of said improvements; and in and to all original and reissued patents which have been or shall be filed in the United States and all foreign countries on said improvements;

Agree that said Assignee may apply for and receive Letters Patent for said improvements in its own name; and that, when requested, without charge to but at the expense of said Assignee, its successors, assigns and legal representatives, to carry out in good faith the intent and purpose of this assignment, the undersigned will execute all divisional, continuing, substitute, renewal, reissue, and all other patent applications on any and all said improvements; execute all rightful oaths, assignments, powers of attorney and other papers; communicate to said Assignee, its successors, assigns, and legal representatives, all facts known to the undersigned relating to said improvements and the history thereof; and generally do everything possible which said Assignee, its successors, assigns or legal representatives shall consider desirable for aiding in securing and maintaining proper patent protection for said improvements and for vesting title to said improvements and all applications for patents and all patents on said improvements, in said Assignee, its successors, assigns and legal representatives; and
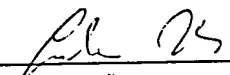
Covenant with said Assignee, its successors, assigns and legal representatives that no assignment, grant, mortgage, license or other agreement affecting the rights and property herein conveyed has been made to others by the undersigned, and that full right to convey the same as herein expressed is possessed by the undersigned.

ACKNOWLEDGEMENTS

_____
Christoph A. Aktas

Witness No. 1:

By:_____   Date:_____
Printed Name:_____

Witness No. 2:

By:_____   Date: 4/30/01
Printed Name: Dr. Wolfgang Böhm

_____
John W. Yates

Witness No. 1:

By:_____   Date:_____
Printed Name:_____

Witness No. 2:

By:_____   Date:_____
Printed Name:_____

Covenant with said Assignee, its successors, assigns and legal representatives that no assignment, grant, mortgage, license or other agreement affecting the rights and property herein conveyed has been made to others by the undersigned, and that full right to convey the same as herein expressed is possessed by the undersigned.

ACKNOWLEDGEMENTS

_____
Christoph A. Aktas

Witness No. 1:

By:_____   Date:_____
Printed Name:_____

Witness No. 2:

By:_____   Date:_____
Printed Name:_____

_____
John W. Yates

Witness No. 1:

By: _Mary Buttner_   Date: _March 3 2001_
Printed Name: _Mary Buttner_
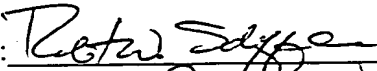
Witness No. 2:

By: _Charles C Yates_   Date: _3/3/01_
Printed Name: _Charles E Yates_

Phillip C. Meredith

Witness No. 1:

By: _Robert Scheffer_   Date: _3/3/01_

Printed Name: _ROBERT W. SCHEFFER_

Witness No. 2:

By: _Robin Parker Meredith_   Date: _3-3-01_

Printed Name: _Robin Parker Meredith_